

NETWORKS

FAQ

Q What are jumbo frames and how do I use them?

A Ethernet networks are limited to sending a maximum of 1,518 bytes of data (called a frame) at a time. When Ethernet was first used, it was prone to a high number of errors. The frame size meant that only 1,518 bytes would have to be retransmitted in case of an error. However, as each frame has to be processed by both hardware at the switch and network card level, and software in Windows, high throughputs can cause high processor utilisation.

Jumbo frames are typically set with a maximum transmission size of 9,000 bytes. Sending data using this method requires fewer frames and less processing, so throughput increases. Jumbo frames are used only over a local network, as there's more bandwidth and less chance of errors.

Network attached storage (NAS) devices often have the option for jumbo frames. The faster throughputs offered make sense for file sharing; see our NAS lab on page 103. To use it, you'll also need network switches that support it.

David Ludlow
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LINKSYS iPhone CIT300

★★★★★
£53 inc VAT



PHILIPS Dual Phone VOIP 321

BEST BUY
★★★★★
£58 inc VAT



Using Skype as an alternative to your traditional landline is easier if you buy a dedicated cordless handset such as Linksys's iPhone CIT300 or Philips' Dual Phone VOIP 321. Both kits come with a base station that plugs into your PC via USB and your landline. A separate handset and charging station can be put anywhere else in your house, allowing you to make both Skype and landline calls.

Both handsets have the same interface as US Robotics' Cordless Skype Dual Phone, reviewed in *What's New: Networks, Shopper* March 2007. We assume they are all made by the same manufacturer; we found that any handset could be registered with any other base station and the Skype functions

would still work. Both phones have a Skype button that gives you access to your online contacts, or you can dial a standard phone number and hit this button to use SkypeOut credits instead of a landline.

The iPhone CIT300 is the smaller handset, but it's not quite as comfortable to hold; the Dual Phone has larger keys and sits better in the hand. Linksys has the slightly better menu system, using a colour screen and bright graphics; Philips uses a standard monochrome screen, which is easy to read but not as pretty.

Call quality is the most important thing, though, and it's here that Philips' Dual Phone outshines Linksys's iPhone. Calls over our landline using the Dual Phone were every bit as good as a standard DECT phone. Using Skype, call quality was almost as good. The Dual Phone produced clean sounds while reducing background noise and reception was amazingly clear. The iPhone wasn't quite as good, and it was hard to hear because callers sounded muffled. Transmission quality wasn't as good either, and voices sounded more distorted than with the Dual Phone.

Linksys's iPhone, Philips' Dual Phone and US Robotics' Cordless Skype Dual Phone are all roughly the same product, so choosing one over the others is difficult. Ultimately, while Linksys's and US Robotics' phones are both good value and sound acceptable, Philips' Dual Phone is the better choice. It's a bit more expensive, but the extra sound quality is worth it. If you fancy getting two handsets, the dual-handset pack, which costs £92, is even better value.

David Ludlow

LINKSYS SUMMARY

- ✓ Colour screen
- ✓ Easy to use
- ✗ Can sound muffled

SKYPE PHONE Docking station, base station, USB and landline connection, 60-number address book (50 on phone and 10 on base station), 120 hours' standby time, 10 hours' talk time
PART CODE CIT300
SUPPLIER www.broadbandbuyer.co.uk
DETAILS www.linksys.co.uk

PHILIPS SUMMARY

- ✓ Easy to use
- ✓ Excellent call quality
- ✗ Monochrome screen

SKYPE PHONE Docking station, base station, USB and landline connection, 60-number address book (50 on phone and 10 on base station), 100 hours' standby time, 10 hours' talk time
PART CODE PHOPHVOIP32115
SUPPLIER www.micro-direct.co.uk
DETAILS www.philips.com

Also consider...

DEVOLO DLAN 200 AVdesk Starter Kit

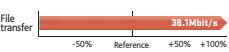
★★★★★
£133 inc VAT

PRICE CUT!



BEST BUY Devolo's AVdesk Starter Kit comes with two HomePlug 200Mbit/s network adaptors that transmit data over your existing power lines. These performed very quickly, with a throughput of 38.1Mbit/s coming close to pre-N wireless performance. If wireless is temperamental in your home, these network adaptors will provide you with a fast and reliable alternative.

POWERLINE NETWORKING
Two HomePlug AV Ethernet adaptors with Ethernet port
PART CODE 1186
SUPPLIER www.lambda-tek.com
DETAILS www.devlo.co.uk
✓ Good value ✗ Interfered with our wireless mouse
FULL REVIEW Feb 2007



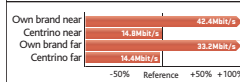
D-LINK RangeBooster N 650 Router

★★★★★
£88 inc VAT



BEST BUY The pre-N RangeBooster router is incredibly easy to set up thanks to the Windows XP Connect Now system, which configures the router using USB. It's also very quick, peaking at 42.4Mbit/s at close range when using a RangeBooster PC Card, which is easily enough for file sharing or streaming video. This is a great router and incredibly fast for the price.

WIRELESS ROUTER Pre-802.11n wireless router (300Mbit/s), four Ethernet ports, one WAN port, UPnP
PART CODE DIR-635
SUPPLIER www.dabs.com
DETAILS www.dlink.com
✓ Consistently fast; easy setup
✗ No WEP support
FULL REVIEW Nov 2006





TRENDNET TV-IP301W



£414 inc VAT

TrendNet's TV-IP301W is a wired and wireless security camera, so you can monitor anywhere in your home or office. As the camera runs its own operating system, you can even use it without having to leave a PC turned on.

TrendNet provides only a basic fixed stand. The camera has mount threads on its top and bottom, so you can ceiling-mount it if necessary. The RS-485 output on the rear means you can control a third-party powered stand through the camera's web interface.

The TV-IP301W also has a set of infrared LEDs that turn on in low light, so the camera can take footage even when it's dark. Unfortunately, power has to be run separately to the LEDs via a splitter cable, which makes the camera look untidy and a bit like a demonstration model. The camera also gets quite warm when it's turned on. Installation is easy using the provided Windows software. Strangely, this application doesn't let you scan for wireless networks to join, prompting you to type in every setting manually, even though the camera's web-based interface does.

If you have just one camera, you can control it using a web browser. The interface is neat, and there's a choice of viewing video footage using ActiveX or Java. However, the Java viewer supports only motion JPEG, not MPEG4 video, which eats up a lot more network bandwidth. We used ActiveX, which produced excellent frame rates and high-quality video at a resolution of 640x480. The TV-IP301W supports two motion-detection windows, on which you can resize and set the sensitivity individually. When motion is detected, the camera can be configured to send an email and upload a frame to a website. It's one of the easiest cameras to configure we've used.

If you want to control multiple cameras, you'll have to install TrendNet's IPView Pro. For each camera you can monitor the live video feed, set up a recording schedule and configure motion detection and notification. In addition, you can play captured video. We found it to be a surprisingly good application, especially compared to the outdated software used by D-Link's Wireless Internet Camera, which was reviewed in *What's New: Networks, Shopper* April 2007.

The TV-IP301W is a good-quality security camera that's easy to configure, but it's expensive, especially considering that you don't even get a powered stand with it.

David Ludlow



SUMMARY

- ✓ Easy to configure
- ✓ Good video quality
- ✗ Untidy cabling

WIRELESS CAMERA 802.11g (54Mbit/s), 10/100 Ethernet, infrared LED light, 640x480
PART CODE TV-IP301W
SUPPLIER www.scan.co.uk
DETAILS www.trendnet.com

D-LINK Wireless 108G Gigabit QoS Router



£99 inc VAT

D-Link's Wireless 108G Gigabit QoS Router is the first router we've

seen to include a four-port Gigabit Ethernet switch. With throughputs 10 times faster than 100Mbit/s Ethernet, it's ideal for sharing files, particularly if you have a network attached storage (NAS) device; see *Labs* on page 103. The Gigabit QoS Router also supports jumbo frames (see FAQ, opposite).

As with D-Link's other recent routers, the Gigabit QoS Router can be configured using the setup wizard on the CD provided. This takes you through every step from plugging the router in to setting up security. Strangely, the maximum level of security you can set is WPA – not WPA2, even though the router supports it. If you're running a Windows network, you can use Windows Connect Now and use a USB thumb drive to transfer the settings to the router, via its USB port, and other Windows PCs.

The Gigabit Ethernet switch doesn't make any difference to the wireless performance. Our wireless test showed that performance was slightly above average, although there was a big drop-off in throughput moving from near to far range. The Gigabit switch comes into play when you're using a wired network. Running our throughput test using two Gigabit Ethernet PCs, we recorded a stunning throughput of 181.75Mbit/s or 21.67MB/s. Forcing our network cards to run at 100Mbit/s we managed only 83.89Mbit/s. The Gigabit speed isn't 10 times as fast, because it's limited by the speed of the hard disks in our test systems. Still, running a network at hard disk speed is excellent for sharing files.

The router has built-in quality of service (QoS), so it can prioritise time-sensitive traffic such as voice calls. The simple web interface gives access to the other advanced features, such as the firewall and port forwarding.

If you're looking for a decent 802.11g wireless router and want to share storage over a wired network, D-Link's Wireless 108G Gigabit QoS Router is a good choice. However, it's expensive for a router without an ADSL modem, and you can add a Gigabit Ethernet switch to your existing wireless router for around £25.

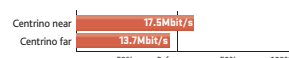
David Ludlow

SUMMARY

- ✓ Gigabit Ethernet switch
- ✓ Good wireless performance
- ✗ Expensive

WIRELESS ROUTER 802.11g (108Mbit/s turbo mode), four-port Gigabit Ethernet switch, WAN port
PART CODE DI-724GU
SUPPLIER www.morecomputers.com
DETAILS www.dlink.com

PERFORMANCE (see page 54)



CHOOSING A... Skype kit

Follow the steps to find your ideal specs

PHONE TYPE: Wired USB handset

CALL TYPE: Skype only

EXTRAS: LCD and full keypad

Recommended minimum in grey

1 A handset with the minimum specifications listed above will work with a free Skype account and will cost around £18. It's a more convenient way of making phone calls than a headset. As it's a wired USB handset, you'll have to sit at your PC to make calls. The handset's screen and keypad mean you can select your contacts without having to turn on your monitor, though. Using SkypeOut you can make calls to any other UK landline, and you'll pay around 1.4p a minute to most worldwide locations.

2 Do you want more flexibility with your Skype calls? A USB VoIP adaptor plugs into your PC and landline and works with your existing telephone. Using it, you can make calls using Skype or over your current telephone line. You'll still be restricted to sitting at your PC, though.

For around £50, you can buy a DECT Skype phone. This has a base station that plugs into your PC and landline, and a separate cordless phone that you can plug in anywhere else. The phone's screen lets you choose your Skype contacts remotely, but you'll still need to have your PC turned on.

3 Want to be rid of your PC altogether? A WiFi Skype phone costs around £130 and can connect to your existing network. It has a built-in Skype client, so you don't need your PC. Be careful if you plan to travel, though. Current WiFi Skype phones don't support browser authentication, which you need if you want to use a wireless hotspot.

The free Windows Mobile Skype client lets you turn an existing handheld or smartphone into a Skype client, too. If you want to use Skype over 3G or GPRS, check your mobile contract, as many operators don't allow you to do this.

4 If you want to use Skype as your main phone, buy a Skypeln number. These cost £8.05 for three months and let people with standard telephones call your Skype account. You can buy up to 10 telephone numbers per Skype account, and choose any country and area code. If you have many American contacts, for example, you can buy a US number so it's cheaper for them to call you.